KEWA

NEWSLETTER OF THE LONDON CHAPTER,
ONTARIO ARCHAEOLOGICAL SOCIETY
c/o Museum of Ontario Archaeology
1600 Attawandaron Road, London, ON N6G 3M6

September 2007 07-5

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The April meeting of the London Chapter will be held on Thursday, April 11, 2008. Dana Poulton of D. R. Poulton & Assoc. Inc. will be talking about his work on the assessment of an airline disaster, the 1970 crash of Air Canada Flight 621 in Brampton, Ontario.

Look for announcements in the upcoming issues of KEWA for exciting summertime activities, such as the London Chapter Picnic!

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The meetings will be held at 8 pm at the Museum of Ontario Archaeology, 1600 Attawandaron Road, near the corner of Wonderland & Fanshawe Park Road, in the northwest part of the city.

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ANNUAL RATES

Student	$15.00
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THE HOOVER I SITE (AfHi-328): A SMALL LATE SUMMER/FALL STATION IN SOUTHWESTERN ONTARIO

By James T. Sherratt and Dana R. Poulton

INTRODUCTION

Our understanding of seasonally occupied sites of the Early and Middle Woodland periods in southwestern Ontario has greatly increased since Spence *et al.* (1990:125) lamented the paucity of such sites in the published archaeological literature. Despite advances in our understanding, much can be learned about the exploitation of nut resources during this transitional period from a hunting and gathering mode of subsistence to swidden agriculture. In particular, a better understanding of the collection, processing and consumption of nut resources is needed.

Nut remains have been noted at several Early and Middle Woodland sites including Donaldson, Boyd Lakefront, Morpeth South, Wyoming Rapids and Dawson Creek (Finlayson 1977; Jackson 1986). However, the majority of the known sites lack these remains. In consequence, it is necessary to find a means to identify the exploitation of nut resources, beyond the presence of archaeobotanical remains, by recognizing associated artifacts such as nutting stones. Further, in recognizing the associated artifacts it may be possible to determine the role of nut resources in the Woodland diet, more specifically in the direct consumption of nuts and/or nut oil.

The Hoover I site is a small Middle Woodland special purpose station near Mount Brydges, Ontario (Figure 1). The modest artifact sample from the site includes two anvil stones. The anvil pits on these specimens had different characteristics than the majority of anvil stones previously observed by the authors and it has been inferred that the two anvil stones from this site functioned as nutting stones.

A data search of the available literature found few descriptions of nutting stones (aka nut anvils). The most likely explanation is that most researchers simply include nutting stones in the broader category of anvil stones, despite what appear to be functional differences in the surface of the anvil pit itself.

Past research provides a combined trait list for nutting stones that fit the characteristics exhibited by the two anvils recovered from the Hoover I site. Anvils used in the production of bipolar chipped lithics have angular edges within the anvil pit and the pits are shallow and lack sheen from nut oils. In contrast, the edges within an anvil pit used to process nuts are more rounded; the anvil pits are deeper (see below) and have sheen from contact with the nut oils (Rowe 1995, Adams 2002, Stafford 1991).

This article has three goals: to increase the available data on seasonally occupied sites; to describe the structure of a site inferred to be a late summer/fall station in the seasonal cycle of the hunting and gathering peoples in the region; and to provide a published description of what are inferred to be nutting stones from a site in the region. It is argued here that these artifacts can provide valuable insights into the utilization of nut resources by Early and Middle Woodland peoples. Furthermore, the evidence provided by the Hoover I site suggests that our understanding of sites of these time periods would benefit from a greater emphasis on the function of rough stone artifacts.

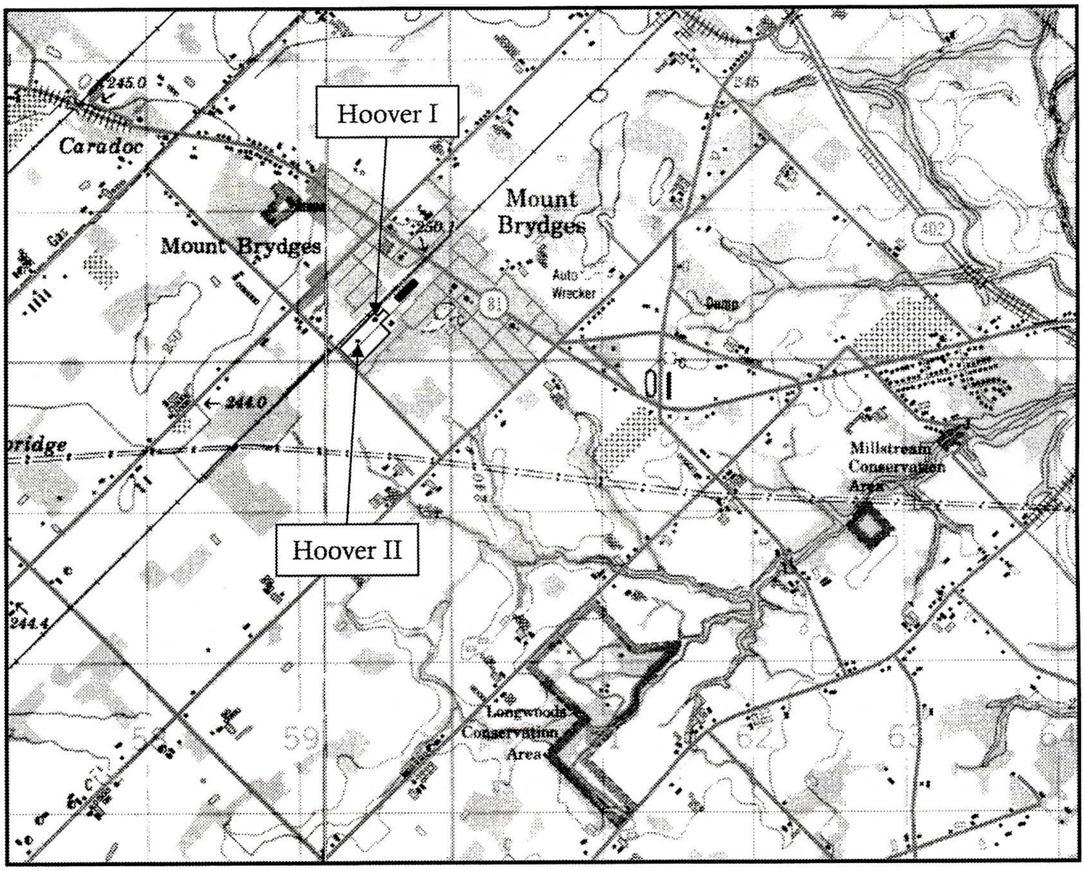

Figure 1: Location of the Hoover I and Hoover II Sites

LOCATION AND DESCRIPTION

The Hoover I site is located approximately 32 kilometres northwest of Lake Erie, 4.5 kilometres west of the Thames River and 47 kilometres southeast of Lake Huron. The closest point on the Lake Erie shoreline is at the mouth of Talbot Creek. Similarly, the closest point on Lake Huron is near the mouth of the Ausable River.

Specifically, the site was situated on the west side of Crow Road in Lot 17, Concession 2, formerly Caradoc Geographic Township, Middlesex County, Ontario. It is approximately 20 metres south of the chain link fence marking the southern limits of the water tower property and 4 metres east of the earthen berm constructed on the railway right-of-way that forms one edge of the property. This site measured 36 metres east-west by 25 metres north-south and had an approximate surface area of 900m^2. It has been marginally impacted by the adjacent railway berm. The site was excavated as part of the archaeological assessment of a proposed residential development.

Hoover I is located on a flat stretch of tablelands. As noted above, the closest significant waterway is the Thames River, located approximately 4.5 kilometres to the east. The Mount Brydges area is situated in the upper reaches of the drainage of Mill Creek, a tributary of the Thames River. However, no extant tributaries of Mill Creek are located within 500 metres of the subject property.

The site is located within the Caradoc Sand Plain physiographic region of Southern Ontario (Chapman and Putnam 1984: 146). The topography of the sand plain is characterized as being level except near Mount Brydges, where there are some old fixed dunes and other sand ridges (*ibid*: 146). The Caradoc Sand Plain is centered in Caradoc Geographic Township and is characterized by three soil types: Fox sandy loam; Berrien sandy loam; and Burford gravely loam.

According to Williamson (1985:87), the soils around Mount Brydges are Class 5. These soils are described as having such "severe limitations that they are not suitable for sustained agriculture." The limitations of Class 5 include "low water-holding capacity, very poor drainage, frequent overflow, erosion and severe salinity." In addition, the Mount Brydges area is at the upper reaches of the Mill Creek drainage system and is not accessible by water, nor is it well irrigated for agriculture. What, then, would attract indigenous peoples to this area during the Woodland period? As discussed below, the local environment provides possible answers to this question.

ENVIRONMENTAL SETTING

The extant vegetation communities in southwestern Ontario were established as early as 7,500 B.P. (Karrow and Warner 1990: 30). During the Early and Middle Woodland periods, the vegetation would have been similar to today with one exception: the presence of American Chestnut.

The Hoover I site is located within the northernmost extent of the Carolinian Biotic Province. This biotic province is characterised by a hardwood forest richly diversified with a wide variety of edible nut and fruit trees. In addition to nuts and fruits, a wide variety of wild plant foods were also available. Table 1 includes a list of potential wild plant foods. The list is not exhaustive and other plants may have been consumed. In addition, the list does not include all of the plants with potential medicinal properties.

The common nut trees include *Fagus grandifolia* (American Beech), *Quercus alba* (White Oak), *Juglans cinerea* (Butternut), *Castanea dentata* (American Chestnut), *Carya tomentosa, Carya glabra* (Pignut Hickory), *Carya, cordiformis (*Bitternut Hickory), *Carya ovata* (Shagbark Hickory), *Quercus rubra* (Red Oak), *Quercus velutina* (Black Oak), *Quercus palustris* (Pin Oak), *Quercus bicolour* (Swamp White Oak) and *Juglans nigra* (Black Walnut) (Williamson 1985: 61; Finlay 1977).

Maycock (1963) describes sand plains, such as the Caradoc Sand Plain, as supporting stands that often have a scattering of hickory throughout. These oak plains also include several secondary nut-producing species including American Chestnut, Beech, Black Walnut, Butternut, Bitternut and Hickory. Oak trees produce an abundant amount of acorns. The acorn of the white oak is edible without leeching. The red oak acorn is bitter and requires more processing to be edible. Talalay *et al.* (1984) have experimented with nut processing using a hammer and anvil and hypothesize that it is the most efficient means of extracting nutmeat from acorns (Talalay *et al.* 1984; Stafford 1991: 217).

As stated above, a wide range of wild resources would have been available within the study area containing the Hoover I site. These resources would have included deer, which would have been attracted to the masting forests. However, the best evidence for the Hoover I site is that the resources being sought here were hard shell nuts. This inference is based on the abundance of nut resources in the area; the relatively long distance to other resources such as water, soils suitable for agriculture and raw materials such as chert; and the presence of two artifacts inferred to be nutting stones used in the processing of nuts.

Table 1 Potential Wild Plant Foods*

Name	Season Available	Name	Season Available
NUTS		**GRAINS AND OIL SEEDS**	
Acorn	Fall	Amaranth	Late Summer/Fall
American Beech	Fall	Bearsfoot	Late Summer/Fall
Black Walnut	Fall	Chenopod	Late Summer/Fall
Butternut	Fall	Erect Knotweed	Late Summer/Fall
American Chestnut	Fall	Little Barley	Spring/Early Summer
Hickory	Fall	Maygrass	Spring/Early Summer
		Ragweed	Late Summer/Fall
FLESHY FRUITS		Sumpweed	Late Summer/Fall
Blackberry	Mid/Late Summer	Sunflower	Late Summer/Fall
Raspberry	Mid/Late Summer	Wild rice	Late Summer/Fall
Blueberry	Mid/Late Summer		
Elderberry	Late Summer/Fall		
Gooseberry	Summer	**LEGUMES**	
Grape	Mid summer/Fall	Peavine	Mid/Late Summer
Ground Cherry	Summer/Fall	Vetch	Summer
Hackberry	Fall/Winter	Wild Bean	Late Summer/Fall
Hawthorn	Summer/Fall	Wild Bean	Late Summer/Fall
June Berry	Summer		
May Apple	Summer		
Mulberry	Summer	**OTHER**	
Nightshade	Summer/Fall	Cattail	Spring/Summer
Plum	Mid summer/Fall	Leek	Fall/Spring
Cherry	Mid summer/Fall	Jerusalem Artichoke	Fall/Early Spring
Prickly Pear	Late Summer/Fall	Purslane	Spring/Fall
Strawberry	Early/Mid Summer		
Sumac	Summer/Fall		

*The above table has been adapted from Scarry 2003, Table 3.1, pages 55 and 56).

HISTORY OF ARCHAEOLOGICAL INVESTIGATIONS

In 2004 Ross Hoover, President of Hoover Construction Limited, contracted D. R. Poulton & Associates Inc. to carry out a Stage 1-2 archaeological assessment of a proposed residential development in Mount Brydges, Middlesex County, Ontario. The survey was conducted on May 12, 2004 by surface examination at a five-metre interval under the direction of Jim Sherratt. It resulted in the discovery of two pre-contact First Nations sites: Hoover I (AfHi-328); and Hoover II (AfHi-329).

Based on the quantity of material observed during the survey, plans were made to return to conduct more intensive Stage 3 controlled surface collections of the two sites. Stage 3 test excavations and Stage 4 salvage excavations followed on both sites. Based on a single diagnostic, a serrated blade fragment of a projectile point of the Nettling type, the Hoover II site is tentatively classified as a lithic scatter of the Early Archaic Period, ca. 7800-7000 B.C. (D. R. Poulton & Associates 2006). This article focuses on the Hoover I site.

A Stage 3 controlled surface collection of Hoover I was carried out on May 13, 2004. It involved an intensive surface examination at a one-metre interval in order to better define the nature, significance and limits of the site. Conditions for the surface examination were excellent, as the site was located in the ploughed portion of the property and had been well-weathered. As artifacts were observed during the surface examination, survey flags were used to mark their locations. These locations, or stations, were then mapped by transit. After their locations were recorded, the artifacts at each station were bagged, tagged and collected. In total, 33 stations were recorded at Hoover I.

Following the Stage 3 controlled surface collection, a preliminary report was submitted to Mr. Ross Hoover for consideration. He granted approval to conduct further Stage 3 investigations to refine the nature and extent of the two sites. As a result, a second controlled surface collection was conducted. The supplementary Stage 3 controlled surface collection of Hoover I was conducted on 26 May, 2004. Ten additional stations were recorded at the site.

Stage 3 test excavations followed. A series of 24 one-metre units were excavated in a checkerboard pattern at a five-metre interval over the area of Hoover I as defined by the surface distributions. The test units were excavated by shovel and all soils were screened through 6 mm mesh in order to maximize recoveries.

As illustrated in Figure 2, two of the 24 Stage 3 test units at the Hoover I site were sterile. Artifact counts in the 22 positive units ranged from 1 to 6 artifacts. Although the artifact frequencies were low and no diagnostic chipped lithics were recovered, the sample recovered by the test excavations included 10 pieces of ceramics. Most were too fragmentary to be diagnostic but among them was a fragmentary rim decorated by cord-wrapped stick. The motif consists of linear stamped obliques on the upper exterior with a single encircling line on the lip. Also recovered were a neck sherd with trailed obliques and a neck sherd with dentate stamped obliques. Based on the ceramics, the site was tentatively identified as an Early Iroquoian component of the Late Woodland Period.

The results of the Stage 3 assessment indicated that the Hoover I site represented a significant archaeological resource and a planning concern. A Stage 1-3 report was produced and submitted to the Ministry and the client recommending preservation by avoidance or mitigation by salvage excavation (D. R. Poulton & Associates Inc. 2004). As it evolved, preservation was not an option and a Stage 4 salvage excavation was conducted.

Under normal circumstances, manual Stage 4 block excavations would not be conducted on a site where the highest Stage 3 test unit only numbered six artifacts. In this case, however, DPA staff determined that a limited block excavation would be beneficial to the understanding and interpretation of the site. As a result, permission was sought from the landowner to conduct a volunteer block excavation prior to the Stage 4 topsoil stripping of the site by heavy machinery. Permission was granted by the client and the block excavations were conducted on Saturday, June 12, 2004 by three DPA staff: Christine Dodd; Lorelyn Giese; and Jim Sherratt. In all, 12 one-metre units were excavated within the portion of the site that contained the surface concentration of ceramics. These excavations resulted in the discovery of Feature 18, which consisted of a collapsed ceramic vessel.

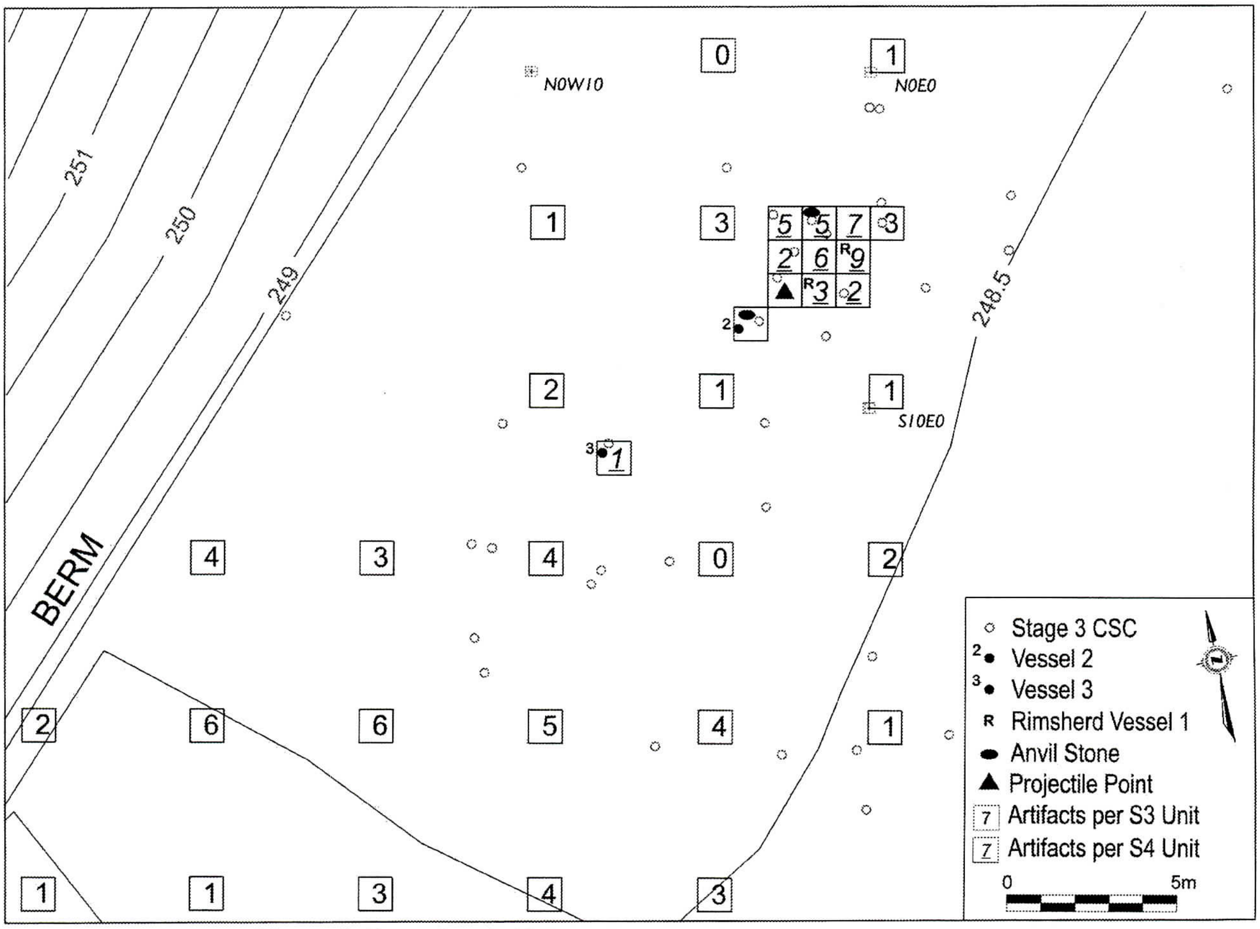

Figure 2: Stage 3 and 4 Manual Excavations at the Hoover 1 Site

As with the Stage 3 test units, the Stage 4 manual units were excavated by shovel and all soils were screened through 6 mm mesh (Figure 2). As the units were excavated, the exposed subsoil was checked for artifacts or other evidence of subsurface cultural features. All of the Stage 4 units contained artifacts. Several pieces of ceramic were embedded in the subsoil and were piece plotted. Frequencies in these units ranged from 1 to 9 pieces per unit.

Following the manual block excavations the Hoover I site, heavy machinery under archaeological supervision was used to strip the ploughzone from the site. Figure 3 illustrates the limits of the area mechanically stripped. Several natural features were identified; they were sectioned to determine if any cultural remains were present. None of the natural features contained artifacts. Finally, the aforementioned Feature 18 was recorded. It was the only cultural feature identified by the Stage 4 excavations.

ARTIFACT ANALYSIS

The Stage 3 investigations recovered a total of 115 specimens from the Hoover I site. The remains consist of chipped lithics, faunal material and ceramics, together with a small quantity of charcoal. The lithic sample includes two informal tools, three cores and 78 waste flakes. The subsequent Stage 4 salvage excavations resulted in the recovery of an additional 195 artifacts; they include chipped lithics, ground stone, ceramics and faunal and floral material. Summary data on the collection are presented in Table 2.

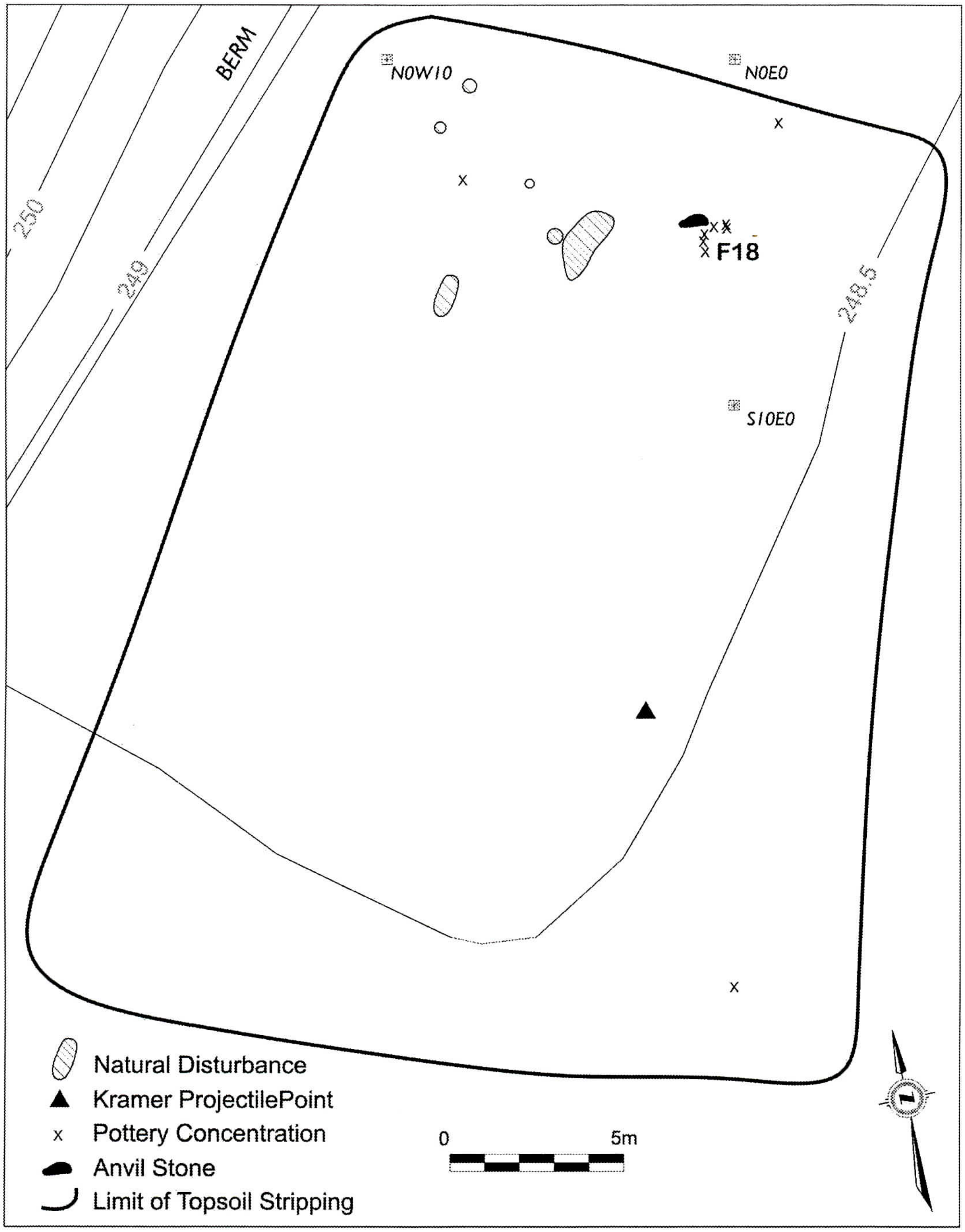

Figure 3: Surface Remains from the Hoover I Site

Ceramics

Excluding crumbs too small to warrant counting, the investigations of the Hoover I site recovered 157 pieces of ceramics (Table 2). The majority of the ceramics were recovered from a single feature,

Feature 18. Unfortunately, most of the ceramics are too fragmentary to be diagnostic.

Table 2 Frequency of Cultural Remains

Chipped Lithics		**Stage**		**Total**	
		Stage 3	**Stage 4**	**f**	**%**
Tools	Projectile Point		2	2	0.65
	Utilized Flake	2	1	3	0.97
	Subtotal –Tools	*2*	*3*	*5*	*1.61*
Cores		3	--	3	0.97
Debitage		78	16	94	30.32
Ceramics	Rim Sherd		2	2	0.65
	Fragmentary Rim	1	5	6	1.94
	Neck/Shoulder	2	10	12	3.87
	Body Sherd	--	34	34	10.97
	Fragmentary Sherd	7	116	123	39.68
	Crumbs/Sherdlets	p	p	p	p
	Subtotal	*10*	*167*	*177*	*57.10*
Rough & Ground Stone	Nutting Anvil	--	2	2	0.65
	Fragment	--	1	1	0.32
Faunal		10	2	12	3.87
Floral (charcoal)		--	4	4	1.29
Fire-cracked Rock		3	--	3	0.97
Historic		9	--	9	2.90
Total		**115**	**195**	**310**	**100.00**

p = present but too small to warrant counting.

Despite the fragmentary nature of the ceramic assemblage, it is inferred that the majority of the ceramics are from a single vessel. It is designated Vessel 1(Figure 4).

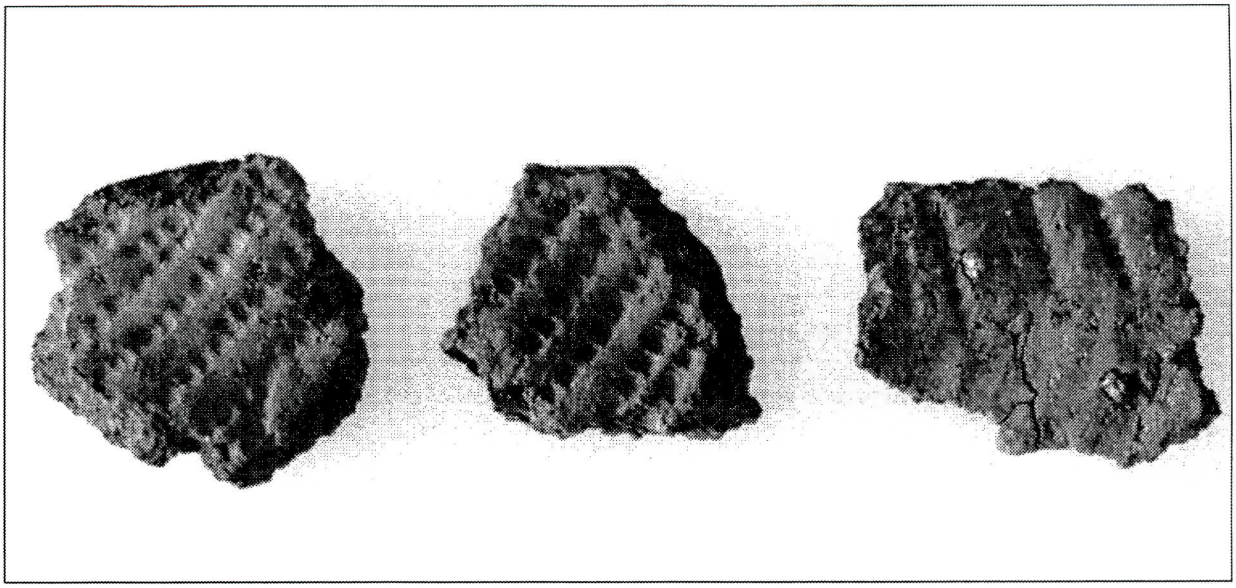

Figure 4: Hoover Site Vessel 1 (to scale)

In addition, for those portions of the vessel that were recovered, decoration covers the entire exterior surface, the lip and the upper portion of the interior. The primary decorative technique of Vessel 1 is rocker dentate stamped and it is evident on the upper rim (Figure 4, left and centre) and the body. The vessel interior is decorated by with obliques (left to right) executed by dentate stamping (Figure 4, right). Some of the fragmentary rim sherds have carbon encrustation on the interior.

The lip on Vessel 1 is decorated with an encircling dentate stamped line. Lip shape is essentially flat, except where grooved by the dentate stamp. Lip thickness is 8.0 mm. The body sherds are relatively thick (in the order of 11 to 12.5 mm), with medium-sized grit temper. The paste is somewhat soft. Coil breaks are present, demonstrating that coiling was the method of manufacture. However, few of the sherds from this vessel display coil breaks. This is most likely because the vessel is somewhat poorly fired and contains a large amount of temper. As a result, when sherds broke off due to damage from ploughing or other factors they rarely broke along the coils.

The second vessel from this site, designated Vessel 2, is represented a fragmentary rim. It was recovered by the Stage 3 test excavations. As previously described in the discussion of the Stage 3 controlled surface collection, this specimen is decorated by cord-wrapped stick. The motif consists of linear stamped obliques on the upper exterior with a single encircling line on the lip.

Another fragmentary rim sherd recovered during the Stage 3 investigations is from a separate vessel. It is designated Vessel 3. This specimen features a blackened interior surface decorated with opposed obliques executed by trailing. The exterior surface is buff-coloured and has a smoothed-over indeterminate malleation.

Chipped Lithics

Five chipped lithic tools were recovered from Hoover I. Two utilized flakes were recovered during the Stage 3 investigations and an additional utilized flake was recovered during the Stage 4 investigations. The Stage 4 investigations also recovered two projectile points.

The first projectile point is a complete triangular point made of Kettle Point chert (Figure 5, left). It has a maximum length, width and thickness of 38.2mm, 20.8mm and 4.0mm, respectively. The specimen has straight lateral edges and a slightly convex base. The projectile point is thin and very well made. It could not be assigned to an established type. In terms of non-metric characteristics, it bears some resemblance to a Meadowood cache blade, more specifically in terms of lateral edge shape (convex), basal shape (convex) and cross section (biconvex).

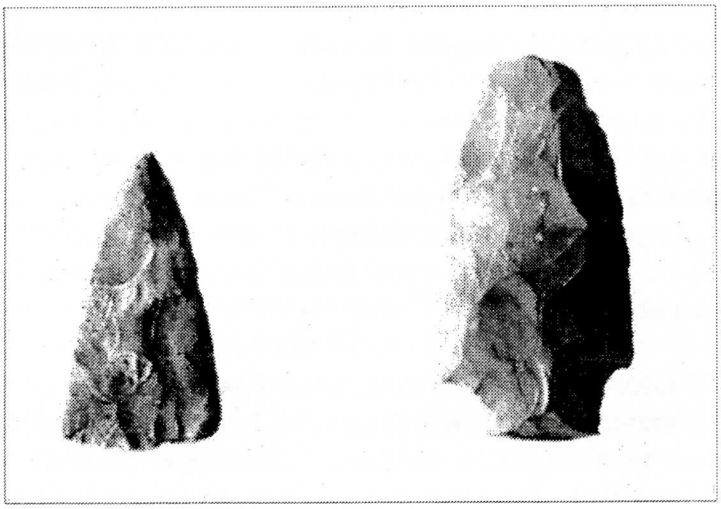

Figure 5: Hoover I Projectile Points (to scale)

However, it is too short and too thin to fit within the range for Meadowood cache blades. In addition, the flaking pattern is different: Meadowood points and cache blades typically have flat flake scars in contrast to the present specimen, which generally has flake scars terminating in step fractures. Most likely, this specimen dates to the late Middle Woodland or Late Woodland time period.

The second projectile point is a mid-section of a stemmed point made of Onondaga chert (Figure 5, right). It is missing the distal portion of the blade and the base of the stem. This specimen has an incomplete length of 49.7mm and a maximum width and thickness of 24.8mm and 8.3mm, respectively. It has convex lateral edges and expanding stem base. The stem has a width of 16.7mm and an incomplete length of 8.4mm. This specimen is plano-convex in cross-section.

Without a complete base, it is difficult to assign the above specimen to a specific type. Stemmed points are present in the Late Archaic (e.g. the Inverhuron type), the Middle Woodland (e.g. the Kramer type) and the Late Woodland (e.g. the Dewaele type). The complete metrics of this specimen are within the range for Kramer type points. Typical Kramer points average 40-70mm in length, maximum width of 17-40mm, maximum thickness of 5-14mm, a blade length of 22-52 mm, stem length of 10-22mm and stem width of 12-20mm (Parker 1992).

In terms of non-metric traits, Kramer points are usually bi-convex or plano-convex in cross-section and have a straight to slightly convex base, triangular or excurvate blade shape and prominent shoulders. The lateral margins of the stem can be straight, contracting or excurvate in shape and are relatively long in relation to the blade (Parker 1992).

As outlined above, the above point shares a number of metric and non-metric traits with Kramer type points. As a result, it is tentatively identified as being of that type. Kramer points are argued by Parker (1992) to be representative of the transition from the Early Woodland Period to the Middle Woodland Period in Ontario and represent a functional shift from smaller, side-notched points such as Meadowood to larger bifaces of the Middle Woodland Period.

Three utilized flakes were recovered from the site. Only one of them was recovered during the Stage 4 salvage excavations. It is made of a secondary flake of Kettle Point chert. The utilized flake measures 39.4mm in length, 19.6mm in width and the thickness is 4.4mm. The utilized edge is located on the dorsal ventral surface and is straight in shape. The utilized edge is 12.3mm in length. The second utilized flake is made of a flake fragment of Onondaga chert. It measures 20.5mm in length, 11.9mm in width and the thickness is 2.8mm. The utilized edge is located on the proximal ventral surface and is straight in shape. The utilized edge is 6.8mm in length. The remaining utilized flake is made of a primary flake of Onondaga chert. It measures 21.4mm in length, 20.1mm in width and the thickness is 4.4mm. The utilized edge is located on the ventral lateral surface and is irregular in shape. The utilized edge is 15.6mm in length.

Three cores were recovered from the site, all from the Stage 3 investigations. Two cores are made of Onondaga chert. One of them is bipolar and measures 38.4mm in length, 36.7mm in width and the thickness is 13.1mm. This specimen has also been utilized on the dorsal lateral edge. The utilized edge is convex in shape and measures 11.9mm long. The other core of Onondaga chert is of the random type. It measures 31.3mm in length, 27.8mm in width and the thickness is 9.4mm. The final specimen is a fragment of random type core made of Selkirk chert. It measures 36.8mm, 27.6mm and 9.2mm in length, width and thickness, respectively.

Seventy-eight pieces of debitage were recovered from the Stage 2-3 investigations of the Hoover I site. The Stage 4 salvage excavations resulted in the recovery of an additional 16 pieces of debitage. A variety of cherts are represented in the total sample of 94 specimens. They include Onondaga (n = 40, 42.6%), Kettle Point (n = 45, 47.9%), Selkirk (n = 4, 4.3%) and indeterminate cherts (n = 5, 5.3%) (Table 3).

Table 3 Frequencies of Chipping Detritus

Chert Type		Flake Morphology					
		Primary	Biface Thinning	Shatter/ Bipolar	Flake Fragments	f	%
Onondaga		7	10	1	22	40	42.55
Kettle Point		2	21	1	21	45	47.87
Selkirk		2	1		1	4	4.26
Unidentified		1	2		2	5	5.32
Total	**f**	**12**	**34**	**2**	**46**	**94**	**100.0**
	%	**12.77**	**36.17**	**2.13**	**48.94**	**100.0**	

The types of debitage present represent the latter stages in the process of lithic tool production. Primary flakes are classified as such based on the presence of cortex on their dorsal surface. A total of 12 (12.8%) are primary flakes. The remaining flakes consist of secondary or thinning flakes (n = 34, 36.2%), flake fragments (n = 46, .46.9%) and shatter (n=2, 2.1%). Secondary flakes, shatter and flake fragments are the result of the transformation of a prepared core into a tool preform or a finished tool.

Rough and Ground Stone

The Stage 4 salvage excavations resulted in the recovery of three pieces of rough and ground stone. The only ground stone artifact is a small fragment of a larger tool that retains a smooth surface. The other two artifacts in this category are complete. They consist of anvil stones that have been classified as possible nutting stones. One of the two nutting stones is illustrated in Figure 6.

Odell (2005:79) has identified nutting stones as igneous or metamorphic rock with depressions pecked into their surface that are used to crack open nuts. A more definitive classification would require chemical analysis to determine the presence or absence of nut oils.

As stated in the introduction, nutting stones (aka nut anvils) are often lumped together with other anvil stones despite some differences in the surface of the anvil pit itself. As stated previously, anvils used in the production of chipped lithics have angular edges within the anvil pit and the pits are shallow and lack a sheen. In contrast, the edges within an anvil pit used to process nuts are more rounded and the anvil pits are deeper (see below) and have a sheen from contact with the nut oils.

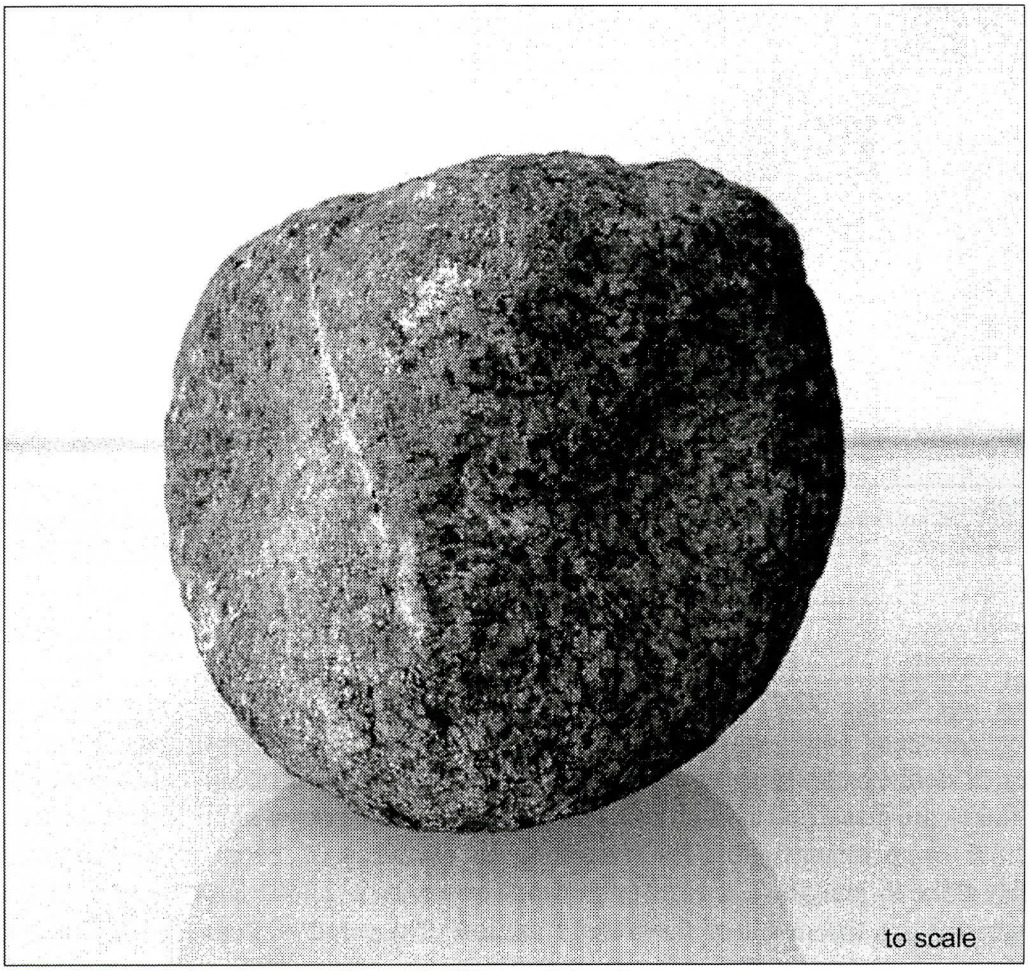

Figure 6: Hoover I Anvil stone

Rowe (1995) conducted experiments to examine differences in use wear between anvils used in bipolar flaking, bow drilling and nut cracking. The ability to distinguish between different uses was found to be dependent on the amount of use. For example, the pits in the experimental nutting stones grew larger and rougher as the work progressed. The size of the anvil increased until it reached a size corresponding to the size of the nut (Adams 2002; Rowe 1995). The depressions on the anvils were more irregular and damaged (Adams 2002:159).

Talalay *et al.* (1984) have also experimented with nut processing by this method. They hypothesize that it is the most efficient means of extracting nutmeat from acorns (Talalay *et al.* 1984; Stafford 1991: 217).

Miscellaneous

The Stage 3 investigations also recovered eight fragments of mammal bone that have been burned. These specimens are too fragmentary to be classified to the level of species. The two remaining pieces of mammal bone were unmodified. The Stage 4 investigations resulted in the recovery of an additional two pieces of unidentified bone fragments.

The Stage 4 investigation resulted in the recovery of three pieces of charcoal. One of them was recovered from the light fraction of a flotation sample from Feature 18. The flotation sample also included uncarbonised chenopod and an unidentified grass species (Emily Holland, personal communication to Jim Sherratt). The charcoal could not be classified due to the fragmentary nature of the specimens.

DISCUSSION

Based on the ceramics, the Hoover I site is interpreted as a component of the Saugeen Complex of the Middle Woodland Period (Finlayson 1977). Following Spence *et al.* (1990: 148), the dentate-stamped Vessel 1 and the cord-wrapped stick decorated Vessel 2 have several characteristics typical of Middle Woodland ceramics. They include method of manufacture, decorative technique, location of decoration, vessel wall thickness, paste type, and a slightly outflaring upper rim. Vessel 3, the one decorated by trailing, is thinner and less typical but may also pertain to this component, as it was recovered in close proximity (see below).

As discussed by Poulton (1985) with respect to the Saugeen component at the Pond Mills site in London, both Wright (1972) and Finlayson (1977) view the Saugeen as an Early to Middle Woodland continuum beginning approximately 700 B.C. and extending to at least 600 A.D. (Finlayson 1977:604, 612). However, the potential for cultural contamination from earlier components has been recognized as a possible source of error for the earlier dates from the Donaldson site (*Ibid*: 191) and from several other early Saugeen components (Spence and Pihl 1984:38). This suggests that the Saugeen Complex began somewhat later, and that it had a time span of ca. 300 B.C. to 600 or 800 A.D.

Further to the above, Finlayson (1977:583:590, 617-620) has tentatively inferred two major temporal trends in Saugeen ceramics: a decline in pseudo scallop shell decoration; and a corresponding increase in rocker dentate stamping. The latter trend defines a late Saugeen phase dating ca. 100-600 or 800 A.D. (*Ibid*: 612). Spence *et al.* (1990: 155) state that these inferred trends have not yet been firmly established but seem convincing. If the trends are indeed valid, the ceramics from Hoover I could place the Middle Woodland occupation of the site in the late phase of the Saugeen Complex.

The distributions of diagnostic and undiagnostic artifacts provide further indications of the possible relationships between the artifacts recovered from Hoover I. Almost all of the ceramics were found within an area measuring about five metres in diameter, centred on the collapsed dentate-stamped pot designated Vessel 1. In addition, the cord-wrapped stick sherd designated Vessel 2 was found on the southwest edge of this cluster (Figure 2). One of the two anvil stones tentatively classified as a nutting stone was found in screening the ploughzone from a one-metre unit on the southwest edge of the cluster. The other anvil stone was found on the north edge of the cluster, within a metre or so of the collapsed pot designated Vessel 1. It was discovered in trowelling the topsoil-subsoil interface, with the lower portion of the anvil stone embedded in the subsoil. That may well have been intentional, as embedding the anvil stone in this manner would have created a stable surface for cracking nuts.

The other artifacts from Hoover I that are, to varying degrees, diagnostic are the ceramics designated Vessels 2 and 3 and the two projectile points. As illustrated in Figure 2, the cord-wrapped stick decorated fragmentary rim sherd designated Vessel 2 was found in screening the ploughzone from the same one-metre unit on the southwest edge of the cluster that contained one of the two anvil stones. These distribution patterns tend to support the hypothesis that Vessels 1 and 2 and the two anvil stones are all associated with each other and that they pertain to a single occupation by peoples of the Saugeen Complex during the Middle Woodland period.

Curiously, the triangular projectile point was also found in the southwestern part of the small artifact cluster (Figure 2). As stated previously, this point has been attributed to the late Middle Woodland or Late Woodland time period. If this is indeed the case, the triangular projectile point would represent an isolated find unrelated to the Saugeen component, one that just happened to coincide with this component. The other possibility is that the triangular projectile point is related to the Saugeen component. However, after more than half a century of excavations on Saugeen sites, it seems unlikely that a hitherto unrecognized Saugeen biface form would be discovered. Given this and the multi-component nature of many sites on the Caradoc Sand Plain, the most likely interpretation of this artifact remains that it is an isolated find unrelated to the Saugeen component.

The fragmentary rim with the trailing and the indeterminate smoothed-over malleation designated Vessel 3 was found about five metres southwest of the artifact cluster (Figure 2). In the absence of any ceramics diagnostic of other time periods and cultures, that would tend to suggest that it too is associated with the Saugeen component.

The projectile point tentatively identified as a Kramer point may be associated with the Middle Woodland occupation of the site. Kramer points at the Shultz site in Michigan have been dated to have been radiocarbon dated to 500 B.C. and they have been inferred to have been in use until ca. 1 A.D. or slightly later (Parker 1992). That said, the association between the Saugeen component of the Hoover I site and the stemmed projectile point fragment is equivocal. As illustrated in Figure 3, the latter was found at interface, almost 15 metres south of the artifact cluster that included the two anvil stones and the diagnostic Saugeen ceramics. As such, it is entirely possible that the stemmed projectile point fragment is an isolated find unrelated to the Middle Woodland occupation of the site.

The presence of two possible nutting stones suggests that the Hoover I site was a special purpose site where the activities conducted included nut processing. Further lines of evidence, such as those outlined in the environmental reconstruction, support this interpretation. The presence of ceramics can also be used as a supporting line of evidence. Orker (1982:77) infers that ceramics were a part of the processing of hard shell nuts and in particular in the extraction of nut oil from crushed masses of nuts.

The end product of the nut meat extraction cannot be directly inferred from the available data. Orker suggests that oils were extracted from the nuts by a simmering method of cooking (Orker 1982: 77, quoted in Garland 1986:60). As noted above, the majority of nut meat can be consumed without further processing after extracted from the shell. The exception is Red Oak. Evidence of cooking in the form of carbon encrustation was observed on the interior rims of Vessels 1 and 3. Furthermorem, it is minimally inferred from the presence of anvil stones that the initial processing of nuts was conducted at the Hoover I site, followed by consumption of the nuts at the site and/or by their transportation to another location.

CONCLUSIONS

In summary, the Hoover I site is inferred to be a small, temporary camp of the Saugeen Complex that was occupied during the late summer or fall. The only cultural feature, Feature 18, is interpreted as the remains of a collapsed vessel. The site is interpreted as relating to nut processing based on the presence of material culture inferred to relate to this activity. The presence of the Kramer point may also suggest that hunting was being practiced by the inhabitants of the site if, in fact, it is associated with the ceramics and the nutting stones. The identification of nutting stones has implications not only for our understanding of the Middle Woodland Period but also the Early and Late Woodland periods as archaeologists struggle to understand the role of wild resources in the economy of the horticulturalists of the Eastern Woodlands.

Acknowledgments

The authors wish to thank all who participated in or otherwise facilitated the investigations of the Hoover I site, including Mr. Ross Hoover, President of Hoover Construction, who funded the excavations of the site. Thanks are also due to Christine Dodd, who first suggested the nutting function of the anvil stones and to Christine, Lorelyn Giese and Jim Sherratt, all of whom assisted in the volunteer block excavation of the site. Our gratitude is also extended to Sherri Pearce and James Caldwell for providing references to nutting stones. In addition, the authors' gratitude is extended to Emily Holland of the University of Toronto at Mississauga Paleo-ethnobotany lab for analyzing the light fraction from Feature 18. Lastly, we wish to thank all who have come before, through whose tireless efforts the archaeological record is formed.

REFERENCES CITED

Adams, Jenny, L.
2002 **Ground Stone Analysis: A Technological Approach.** The University of Utah Press. Salt Lake City, Utah.

Chapman, L.J. and D.F. Putnam
1984 **The Physiography of Southern Ontario (Third Edition)**. Ontario Geological Survey Special Volume 2. Ontario Ministry of Natural Resources, Toronto.

Finlay, Peter
1977 Vegetation Survey of Middlesex County in the Early Nineteenth Century relating to the Thames River and Surrounding Area. Unpublished Manuscript. On File, Ministry of Culture, London.

Finlayson, William D.
1977 The Saugeen Culture: A Middle Woodland Manifestation in Southwestern Ontario. **National Museum of Man, Archaeological Survey of Canada, Mercury Series Paper**

No. 61.

Garland, Elizabeth
1986 Early Woodland Occupations in Michigan: A Lower St. Joseph Valley Perspective. In Early Woodland Archaeology. Edited by K. Fansworth and T. Emerson. **Center for American Archaeology, Kampsville Seminars in Archaeology** No. 2: 47-77.

Jackson, L.
1986 New Evidence for Early Woodland Seasonal Adaptation from Southern Ontario, Canada. **American Antiquity** 51: 389-401.

Karrow, P. F. and Warner, B.G.
1990 The Geological and Biological Environment for Human Occupation in Southern Ontario. **The Archaeology of Southern Ontario to A.D. 1650**. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5. Edited by Christopher Ellis and Neal Ferris. Pp. 5-63. London, Ontario.

Maycock, P.
1963 The Phytosociology of the Deciduous Forests of Extreme Southern Ontario. Canadian **Journal of Botany** 41:379-438.

Odell, George
2005 **Lithic Analysis**. Manuals in Archaeological Method, Theory and Technique. Kluwer Academic/Plenum Publishers. New York.

Ozker, Doreen
1982 A Early Woodland Community at the Schultz site 20SA2 in the Saginaw Valley and the Nature of the Early Woodland Adaptation in the Great Lakes Region. University of Michigan, **Museum of Anthropology, Anthropological Papers No. 70**.

Parker, Bud
1992 Kramer Points. In **KEWA** 1992-8.

Poulton, Dana R.
1985 Salvage Archaeology in London: the 1983-1984 C.O.E.D. Program and the Magrath, Willcock and Pond Mills Sites. Manuscript on file, Museum of Ontario Archaeology.

D. R. Poulton and Associates
2004 The 2004 Stage 1-3 Archaeological Assessment of the Hoover Residential Development, Draft Plan 39T-SC-0103, Village of Mount Brydges, Lot 17, Concession 2, Caradoc Geographic Township, Middlesex County, Ontario. Report on File, Ontario Ministry of Culture and Corporate Offices of D.R. Poulton & Associates.

2006 The 2004 Stage 4 Archaeological Investigations of Hoover I (AfHi-328) and Hoover II (AfHi-329) Sites, Part Lot 17, Concession 2, Hoover Residential development, Draft Plan 39T-SC-0103, Caradoc Geographic Township, Middlesex County, Ontario. Report on File, Ontario Ministry of Culture and Corporate Offices of D.R. Poulton & Associates.

Rowe, R.
1995 Towards Cupstone Classification: An Experimental Approach. **Ohio Archaeologist** 45(3):11-17.

Scarry, Margaret
2003 Patterns of Wild Plant Utilization in the Prehistoric Eastern Woodlands. In **People and Plants in Ancient Eastern North America.** Edited by Paul Minnis. Pp. 50-104. Smithsonian Books. Washington.

Spence, Michael W. and Robert H. Pihl
1990 The Early and Middle Woodland Occupations of Southern Ontario: Past, Present and Future Research. **Arch Notes**, 1984-2.

Spence, Michael, Robert Pihl and Carl Murphy
1990 Early and Middle Woodland. In **The Archaeology of Southern Ontario to A.D. 1650**. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5. Edited by Christopher Ellis and Neal Ferris. Pp. 125-170. London, Ontario.

Stafford, C.
1991 Archaic Period Logistical Foraging Strategies in West-Central Illinois. **MidContinental Journal of Archaeology** 16(2): 212-246.

Talalay, Laurie, D. Keller and P. Munson
1984 Hickory Nuts, Walnuts, and Hazelnuts: Observations and Experiments Relevant to Their Aboriginal Exploitation. In **Experiments and Observations on Aboriginal Wild Plant Food Utilization in Eastern North America.** Edited By P. Munson. Pp. 338-359. Prehistoric Research Series Volume 6, No. 2. Indiana Historical Society, Indianapolis.

Williamson, Ronald
1985 Glen Meyer: People in Transition. Unpublished PhD. Dissertation, Department of Anthropology, McGill University, Montreal, Quebec.

Wright, J.V.
1972 **Ontario Prehistory: an eleven-thousand-year archaeological outline**. Archaeological Survey of Canada, National Museum of Man.

Treasurers Annual Report, London Chapter, OAS, 2007

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